

### **Remarks**

The office action mailed April 25, 2006 has been reviewed and these remarks are responsive thereto. Claims 1-40 are pending and stand rejected. Claims 1-5, 7, 10-16, 18, 21-36 and 38-40 are amended herein. No new matter has been introduced.

The office action rejected claims 1 and 2 under 35 U.S.C. § 102(b) based on U.S. Patent 5,966,707 (Van Huben et al., hereinafter "Van Huben"). Claim 1 is amended to recite "transmitting the PCB design portion to first and second clients for graphical display at each of the clients, wherein the graphical displays at each of the first and second clients permit users at said clients to simultaneously view a representation of common PCB artwork corresponding to a common region of the PCB design" (underlining added).<sup>1</sup> Claim 1 is further amended to recite "transmitting, for display at each of the clients as a graphically-depicted subregion of the common region, a protection boundary associated with a PCB design object being edited at the first client" (underlining added).<sup>2</sup> Although Van Huben does make passing references to a "GUI" and to a printed circuit board, it does not teach a system in which multiple clients can simultaneously view a representation of common PCB artwork corresponding to a common region of the PCB design, and in which a protection boundary is displayed as a graphically-depicted subregion of the common region. Accordingly, claim 1 is allowable. Claim 2 depends from claim 1 and is therefore allowable for at least the same reason as claim 1.

The office action also rejects claim 3-5, 7, 8 and 10 under 35 U.S.C. § 102(b) based on Van Huben. Claim 3 is amended to recite that a portion of the PCB master design is transmitted for simultaneous graphical display on first and second clients. Claim 3 further recites that

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<sup>1</sup> Support for this amendment can be found, e.g., in the specification at paragraphs 29 ("to manufacture a printed circuit board, it is necessary to take the schematic and change it into a form of artwork that makes a pattern of components and wires... The artwork is called a PCB design..."), 42 ("[f]or purposes of illustration, it is assumed that the entire board comprises shared areas such that each of the users on the clients 202, 204, 206 can simultaneously edit and view objects in the entire master design 116"), 30 ("a master design refers to a PCB design which can be edited by the users"), 33 ("[e]ach client 202, 204, 206 enables users to request edits to the master design 116 in parallel with one another while viewing edits made to the master design 116 by other users") and 36 ("parallel PCB design gives users the ability to view a compiled master design 116 while requesting edits to the master design 116"). References are to paragraph numbers in the specification as filed.

<sup>2</sup> Support for this amendment can be found, e.g., in Fig. 7.

each of the graphical displays on the first and second clients includes a representation of common PCB artwork corresponding to a region of the PCB master design, the displayed common PCB artwork including a plurality of associated PCB design objects, and

each of the first and second clients can simultaneously view the common PCB artwork and edit the associated PCB design objects.<sup>3</sup>

Van Huben does not teach these features. Instead, Van Huben describes a library-based "data management system." Van Huben col. 5, lines 42-62. A user can "interact with the DMS" to perform such operations as check-in, check-out, promotion, locking, library searching, creating an aggregation, etc. Col. 11, lines 36-41. Data in the library is organized by "package," "variance," "level," "filetype" and "version." Col. 8, line 57 though col. 9. line 9. This organizational scheme can be used to manage design data (e.g., subassemblies of an automobile). See, e.g., col. 9, line 33 through col. 10, line 31. Van Huben makes one reference to a printed circuit board at col. 9, lines 26-32:

This is possible because each Package in the hierarchy has its own set of PVL attributes. For example, a printed circuit board could be considered a high level Package comprised of various ASICs, resistors, capacitors and connectors. The ASICs on the board could be considered Packages themselves, where each ASIC Package is comprised of the underlying circuit designs.

However, the above section of Van Huben is merely indicating that one example of a "package" would be a grouping of design data for different components that may ultimately be placed on a single circuit board. Neither this nor any other portion of Van Huben describes or suggests at least two clients simultaneously displaying a representation of common PCB artwork corresponding to a region of the PCB master design, with the displayed common PCB artwork including a plurality of associated PCB design objects, and with each of the first and second clients able to simultaneously view the common PCB artwork and edit the associated PCB design objects.

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<sup>3</sup> Support for this amendment can be found, e.g., in the paragraphs listed in footnote 1.

Because Van Huben does not teach or suggest all features of claim 3, claim 3 is allowable. Claims 4, 5, 7, 8 and 10 depend from claim 3 and are allowable for the same reasons as claim 3, as well as because of additional features in said claims. For example, claim 5 recites that at least one of the edit requests is automatically generated in response to selection of a PCB design object and a command. The portions of Van Huben relied upon to reject claim 5 do not teach this feature. One of those portions is at column 9, lines 21-54. Lines 26-32 are discussed above, and nothing in lines 21-25 or 33-54 relates to edit request generation. Another section on which the office action relies is column 18, lines 24-52. This part of Van Huben merely discusses a "control repository" comprised of a SQL database and an encrypted metadata file, and does not suggest automatic generation as recited in claim 5. Claim 8 recites determining if the first edit request conflicts with the second edit request. Sections of Van Huben relied on to reject claim 8 fail to teach this feature. Although Van Huben does discuss document check out, locking of files, etc., there is no suggestion of determining whether requested edits to a printed circuit board design conflict.

Claims 6 and 9 are rejected under 35 U.S.C. § 103 based on Van Huben in view of U.S. Patent 5,826,265 (Van Huben et al., hereinafter "Van Huben '265"). Claims 6 and 9 depend from claim 3, and Van Huben '265 fails to cure the above-noted deficiency of Van Huben regarding claim 3. Accordingly, claims 6 and 9 are also allowable. Moreover, and with regard to claim 9, the office action has not identified the portions of Van Huben '265 that purportedly teach the features of claim 9. If rejection of claim 9 based on Van Huben '265 is maintained, Applicants respectfully request that the examiner identify the portions of Van Huben '265 upon which such rejection is based.

Independent claims 11, 14, 22, 25, 33 and 34 stand rejected under 35 U.S.C. § 102(b) based on Van Huben. These claims are amended so that each recites features similar to those discussed with regard to claim 3. Accordingly, each of these claims is allowable for reasons similar to those discussed above in connection with claim 3. Claims 15, 16, 18, 19, 21, 26, 27, 29, 30, 32, 35-38, which also stand rejected under 35 U.S.C. § 102(b) based on Van Huben, depend from one of claims 11, 14, 22, 25, 33 and 34. Accordingly, these dependent claims are allowable at least because of said dependency. Applicants further note that claims 16, 27 and 36

recite features similar to the feature discussed above in connection with claim 5, and that claims 19 and 30 recite features similar to the feature discussed above in connection with claim 8.

Independent claims 12 and 23, as well as respective dependent claims 13 and 24, are rejected under 35 U.S.C. § 102(b) based on Van Huben. Claims 12 and 23 have been amended to recite features similar to those discussed above in connection with claim 1. Accordingly, claims 12, 13, 23 and 24 are allowable for reasons similar to those discussed in connection with claims 1 and 2.

Claims 17, 20, 28 and 31 stand rejected under 35 U.S.C. § 103 based on Van Huben in view of Van Huben '265. Claims 17 and 20 depend from claim 14, and claims 28 and 31 depend from claim 25. Because Van Huben '265 fails to teach the features of claims 14 and 25 discussed above (i.e., features similar to those discussed for claim 3), claims 17, 20, 28 and 31 are allowable. Applicants also note that claims 20 and 31 recite features similar to those of claim 9.

Claims 39 and 40 are rejected under 35 U.S.C. § 102(b) based on Van Huben. Each is amended to recite graphical displays on the first and second clients including a representation of common PCB artwork corresponding to a region of a PCB master design, with the region including first and second sub-regions respectively corresponding to first and second exclusive sub-portions of the design. Each of claims 39 and 40 is further amended to recite that

the displayed common PCB artwork includes a plurality of PCB design objects associated with the first sub-region and a plurality of PCB design objects associated with the second sub-region,

the first client can simultaneously edit PCB design objects associated with the first sub-region and view edits being made to PCB design objects associated with the second sub-region, and

the second client can simultaneously edit PCB design objects associated with the second sub-region and view edits being made to PCB design objects associated with the first sub-region.<sup>4</sup>

These features are similarly not taught by Van Huben, and claims 39 and 40 are thus allowable.

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<sup>4</sup> Support for these amendments can be found, e.g., in specification paragraphs 29, 30, 37, 40, 59 ("a user can view the edits to the other pieces of the design being performed by other users concurrently with the user's editing session") and 64 ("[f]or purposes of illustration, it is assumed that the whole board is exclusive such that users on the clients 202, 204, 206 can simultaneously edit in assigned areas while viewing the compiled master design").

It is respectfully submitted that this application is in condition for allowance. Should the Examiner believe that anything further is desirable in order to place the application in even better form for allowance, the Examiner is invited to contact Applicants' undersigned representative at the below-listed number.

Respectfully submitted,

**/H. Wayne Porter/**

H. Wayne Porter  
Registration No. 42,084

BANNER & WITCOFF, LTD.  
1001 G Street, N.W., 11<sup>th</sup> Floor  
Washington, D. C. 20001-4597  
(202) 824-3000

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